

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (currently amended): A magnetic head including a read head element, comprising:
2 a pinned magnetic layer;
3 a free magnetic layer having a central portion thereof having a free magnetization
4 therewithin;
5 a magnetic bias layer, including a central portion thereof that is disposed across said
6 central portion of said free magnetic layer;
7 said central portion of said bias layer being comprised of a material having an
8 approximately zero magnetic moment;
9 a pair of electrical leads being disposed above said bias layer and on opposite sides of
10 said central portion of said bias layer;
11 a barrier layer being disposed across said central portion of said bias layer, wherein said
12 barrier layer is ~~disposed only upon said central portions of said bias layer and upon said electrical~~
13 ~~leads~~ not disposed between said electrical leads except in said location of across said central
14 portion of said bias layer.

1 2. (original): A magnetic head as described in claim 1 wherein said central portion of said
2 bias layer is comprised of an oxidized material, and said barrier layer is comprised of a material
3 that is a barrier to oxygen diffusion from said central portion of said bias layer.

1 3. (original): A magnetic head as described in claim 2, further including a thin spacer layer
2 that is disposed upon said free magnetic layer, wherein said bias layer is disposed upon said thin
3 spacer layer and said barrier layer is deposited upon said bias layer.

1 4. (original): A magnetic head as described in claim 3 wherein said barrier layer is
2 comprised of a material that has low electrical conductivity.

1 5. (original): A magnetic head as described in claim 4 wherein said barrier layer is
2 comprised of Ru or Rh.

1 6. (original): A magnetic head as described in claim 5 wherein said barrier layer is
2 comprised of Ru having a thickness of from approximately 5 Å to approximately 40 Å.

1 7. (original): A magnetic head as described in claim 6 wherein said barrier layer has a
2 thickness of approximately 20 Å.

1 8. (original): A magnetic head as described in claim 3 wherein said thin spacer layer is
2 comprised of a material that is a barrier to oxygen diffusion.

1 9. (original): A magnetic head as described in claim 8 wherein said thin spacer layer is
2 comprised of Ru.

1 10. (currently amended): A hard disk drive including a magnetic head including a read head
2 element, comprising:

3 a pinned magnetic layer;

4 a free magnetic layer having a central portion thereof having a free magnetization
5 therewithin;

6 a magnetic bias layer, including a central portion thereof that is disposed across said
7 central portion of said free magnetic layer;

8 said central portion of said bias layer being comprised of a material having an
9 approximately zero magnetic moment;

10 a pair of electrical leads being disposed above said bias layer and on opposite sides of
11 said central portion of said bias layer;

12 a barrier layer being disposed across said central portion of said bias layer, wherein said
13 barrier layer is ~~disposed only upon said central portions of said bias layer and upon said electrical~~
14 leads not disposed between said electrical leads except in said location of across said central
15 portion of said bias layer.

1 11. (original): A magnetic head as described in claim 10 wherein said central portion of said
2 bias layer is comprised of an oxidized material, and said barrier layer is comprised of a material
3 that is a barrier to oxygen diffusion from said central portion of said bias layer.

1 12. (original): A magnetic head as described in claim 11, further including a thin spacer
2 layer that is disposed upon said free magnetic layer, wherein said bias layer is disposed upon said
3 thin spacer layer and said barrier layer is deposited upon said bias layer.

1 13. (original): A magnetic head as described in claim 12 wherein said barrier layer is
2 comprised of a material that has low electrical conductivity.

1 14. (original): A magnetic head as described in claim 13 wherein said barrier layer is
2 comprised of Ru or Rh.

1 15. (original): A magnetic head as described in claim 14 wherein said barrier layer is
2 comprised of Ru having a thickness of from approximately 5 Å to approximately 40 Å.

1 16. (original): A magnetic head as described in claim 15 wherein said barrier layer has a
2 thickness of approximately 20 Å.

1 17. (original): A magnetic head as described in claim 12 wherein said thin spacer layer is
2 comprised of a material that is a barrier to oxygen diffusion.

1 18. (original): A magnetic head as described in claim 17 wherein said thin spacer layer is
2 comprised of Ru.

1 19. (previously presented): A method for fabricating a magnetic head, comprising:
2 fabricating a free magnetic layer;
3 fabricating a magnetic bias layer across said free magnetic layer;
4 fabricating electrical leads above portions of said bias layer;
5 oxidizing a central portion of said bias layer;
6 depositing an oxygen diffusion barrier layer upon said oxidized central portion of said
7 bias layer and upon said electrical leads; and

8 removing portions of said barrier layer that are deposited at locations other than upon said
9 electrical leads and upon said central portions of said bias layer.

1 20 (original): A method for fabricating a magnetic head as described in claim 19 wherein
2 said barrier layer is comprised of Ru or Rh.

1 21. (original): A method for fabricating a magnetic head as described in claim 20 wherein
2 said barrier layer is comprised of Ru and has a thickness of from approximately 5 Å to
3 approximately 40 Å.

1 22. (original): A method for fabricating a magnetic head as described in claim 21 wherein
2 said barrier layer is formed with a thickness of approximately 20 Å.